The so-called "economy class syndrome", DVTs, deep vein thrombosis, blood clots, clotting and all the rest - no matter what you call it, flying in planes seems to make the blood clot faster.

Deep vein thrombosis happens in economy, business, and first class seats - perhaps in up to 5% of long-haul passengers depending on their age, sex, weight, medication, if women are pregnant, or on the pill, dehydration, length of flight and altitude. No one really knows.

Dehydration makes the blood thicker and alcohol, tea or coffee all make it worse and blood clots more frequent. Humidity levels can be near zero in a pressurized airline cabin at 35,000 feet.

But there is another effect which adds to the risk of DVT and clots in the legs passing into the lungs (pulmonary embolus) and that is the altitude factor itself. An aircraft is only partly pressurized. As it ascends, the pressure falls in the cabin so that by the time you are at cruising altitude, the cabin pressure is as low as it would be if you were 8,000 feet up a mountain. This altitude problem stresses the body, and the blood reacts so that clots form more easily.

So deep vein thrombosis is for this reason far more common than you would expect in people confined in the same way for the same length of time on - say - a train or a bus.

And what about the evidence for "economy class syndrome"?

If the "economy class syndrome" exists then airlines will come under immediate irresistable pressures to abandon crowding of people into narrow pitch seats. They will fear being sued. But what is the actual evidence? There are not enough studies to be certain that cramped seats are particularly to blame though common sense suggests that of people cannot move around for hours at a time then they are more likely to be at risk from deep vein thrombosis. Lack of movement promotes blood clot formation.

Symptoms of a deep vein thrombosis are very variable and often there are none at all. It is impossible for a doctor to tell on examination whether someone has a blood clot in their legs. A

phsyician will look for the following:

- Pain or swelling in a limb
- Fever
- Rapid heart beat
- Sudden, unexplained cough
- Joint pain and soreness

The diagnosis of DVT can only be confirmed by specialist centres with blood flow tests and other diagnostics designed especially to detect deep vein thrombosis.

Deep vein thrombosis is not actually a great risk to health in itself, compared to it's major complication which is when a piece of clot breaks off and enters the heart, before being pumped into the lungs. This can happen in up to 10% of cases but usually far less often. When clots like this land up in the lungs the result is often severe pain and breathlessness, caused by blockage of one of the main arteries into the lungs. This is called a pulmonary embolus and is a frequent cause of sudden death in people who walk off planes after a long haul flight, feeling tired but otherwise perfectly well.

The most important ways to prevent deep vein thrombosis in flight are the following:

- Drink plenty of non-alcoholic fluids before flight and during
- Make sure you get out of your seat every hour and walk around
- Don't take sedatives to help you sleep during a flight
- Make sure the seat is not pressing into the back of your legs and your feet can rest on the ground or on a foot rest
- Don't cross feet when sitting
- Do stretching exercises of thighs and lower leg / feet regularly
- Avoid alcohol during flight
- Use anti-thrombosis stockings
- Take low dose aspirin 12 hours before flight - but not if you have a tendency to ulcers or indigestion

Treatment involves thinning the blood with warfarin or heparin or both, and bed rest to discourage pieces of clot from moving around the body.